

## Claims

1. A method for decomposing  $\text{H}_2\text{O}_2$  comprising, passing said  $\text{H}_2\text{O}_2$  over an activated catalyst, said activated catalyst having a porous base, said porous base being doped with a calcined cation selected from the group consisting of Mn, Ag, Ru, Pb, V, Cr and Co, said base being monolithic or being divided into particles which are closely packed into a container.
2. The method of claim 1 wherein said base is also doped with at least one catalytic promoter, selected from  $\text{NH}_4^+$  and Groups I and II of the Periodic Table.
3. The method of claim 2 wherein said promoter is selected from the group consisting of  $\text{K}^+$ ,  $\text{Na}^+$ ,  $\text{NH}_4^+$ ,  $\text{Li}^+$ ,  $\text{Sr}^+$  and  $\text{Ba}^+$ .
4. The method of claim 1 wherein said activated catalyst is formed into a pack of a shape selected from the group consisting of cylindrical, conical, tubular and a combination thereof.
5. The method of claim 1 wherein said activated catalyst is in granules and is poured into a vessel communicating with a pressurized  $\text{H}_2\text{O}_2$  storage tank and packed in said vessel for contact with and decomposition of, said  $\text{H}_2\text{O}_2$  as needed, which vessel is vented to discharge the products of decomposition.
6. The method of claim 1 wherein said activated catalyst is contacted with said  $\text{H}_2\text{O}_2$  in a vehicle having an exhaust nozzle for discharging the decomposition products of said  $\text{H}_2\text{O}_2$  to propel said vehicle.
7. A method for decomposing  $\text{H}_2\text{O}_2$  comprising,
  - a) mixing a soluble salt of a catalyst cation into solvent therefor to form a mixture of cations, the cation species being selected from the group consisting of Mn, Ag, Ru, Pb, V, Cr and Co,
  - b) contacting said mixture with a porous [monolithic] ceramic catalyst carrier in an amount sufficient to impregnate said catalyst carrier over the surfaces thereof,
  - c) drying the so impregnated carrier so as to remove solvent therefrom,
  - d) calcining said carrier so as to form a bulk or activated catalyst, said base being monolithic or being divided into particles which are closely packed into a container, and
  - e) contacting said catalyst with  $\text{H}_2\text{O}_2$  to decompose same.
8. The method of claim 7 wherein at least one catalytic promoter, selected from  $\text{NH}_4^+$  and Groups I and II of the Periodic Table, is added to said solvent.
9. The method of claim 8 wherein said promoter is selected from the group consisting of  $\text{K}^+$ ,  $\text{Na}^+$ ,  $\text{NH}_4^+$ ,  $\text{Li}^+$ ,  $\text{Sr}^+$  and  $\text{Ba}^+$ .

10. The method of claim 7 wherein said ceramic catalyst carrier is of a material selected from the group consisting of aluminosilicates, alumina, and silica.
11. The method of claim 7 wherein said cation is loaded on said catalyst carrier in a range of .01 to 20.0 wt. %, metals basis.
12. The method of claim 7 wherein said catalyst carrier is calcined at 150 to 950 °C.
13. The method of claim 7 wherein said porous ceramic carrier is in the form selected from the group consisting of a monolith, honeycomb or chunks, extrudate, pieces, pellets, spheres, herein particles, and a combination thereof closely packed.
14. The method of claim 7 wherein the calcined carrier is contacted with said  $\text{H}_2\text{O}_2$  in a vehicle having an exhaust nozzle for discharging the decomposition products of said  $\text{H}_2\text{O}_2$  to propel said vehicle.
15. The method of claim 14 wherein said vehicle is a rocket.
16. The method of claim 14 wherein said vehicle is selected from the group consisting of a land vehicle, a water vehicle, an aircraft and a spacecraft.
17. The method of claim 14 wherein the decomposition products of said  $\text{H}_2\text{O}_2$  are contacted with fuels selected from solid or liquid propellants in a rocket.
18. A method for decomposing  $\text{H}_2\text{O}_2$  comprising contacting at least one cation with surfaces of a porous ceramic carrier and calcining same to form a bulk or activated catalyst, said base being monolithic or being divided into particles which are securely packed into a container, the cation species being selected from the group consisting of Mn, Ag, Ru, Pb, V, Cr and Co and contacting said catalyst with  $\text{H}_2\text{O}_2$  to decompose same.
19. The method of claim 18 wherein said carrier has added thereon at least one catalytic promoter, selected from  $\text{NH}_4^+$  and Groups I and II of the Periodic Table.
20. The method of claim 19 wherein said promoter is selected from the group consisting of  $\text{K}^+$ ,  $\text{Na}^+$ ,  $\text{NH}_4^+$ ,  $\text{Li}^+$ ,  $\text{Sr}^+$  and  $\text{Ba}^+$ .
21. The method of claim 20 wherein the cation loading on the catalyst carrier is .01 to 20.0 wt. % of the bulk catalyst.